DOCKET: CU-4808

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

APPLICANT: Seong Won LEE et al   )
)
SERIAL NO: 10/579,087   )
)
TITLE: METHOD FOR REMOVING NOISE IN IMAGE   )
               AND SYSTEM THEREOF   )
)
COMPLETION OF PCT/KR2005/002742 filed 19 August 2005   )

AMENDED CLAIMS

1.   (original)   A method for removing noise in an image, the method comprising the steps of:

dividing image data contained in the image into predetermined unit areas;

calculating each threshold corresponding to the unit area by using values of pixels contained in the unit area;

detecting whether a first pixel containing impulsive noise exists in the unit area by using the calculated threshold;

applying a median filter to the first pixel in the case the first pixel is detected;

identifying a second pixel adjacent to the first pixel in the case the median filter is applied to the first pixel; and

applying a mean-variance filter to the second pixel.

2.   (original)   The method of claim 1, wherein the step of calculating each threshold corresponding to the unit area by using values of pixels contained in the unit area comprises the step of calculating threshold $= \alpha + \log_2(x_m)$, and

said α is the minimum threshold to detect a pixel containing impulsive noise and said x_m is the mean of the values of the pixels contained in the unit area.

3.   (original)   The method of claim 1, wherein a value of the second pixel which is filtered by applying the mean-variance filter to the second pixel is calculated as,

$$\text{value of filtered second pixel} = \frac{\sigma_k^2(i,j)k(i,j) + \bar{k}^2(i,j)}{\sigma_k^2(i,j) + k(i,j)}, \text{ and}$$

said $k(i,j)$ is a first pixel value in coordinates (i, j), said $\sigma_k(i,j)$ is the variance

of values of second pixels, and said $\overline{x(i,j)}$ is the mean of the values of the second pixels.

4. (amended)   A computer readable record medium recording a program for implementing the method according to ~~any one of claims 1 to 3~~ claim 1 in a computer.

5. (original)   A system for removing noise in an image, the system comprising:

a threshold calculation unit dividing image data contained in the image into predetermined unit areas and calculating each threshold corresponding to the unit area by using values of pixels contained in the unit area;

a first filter detecting whether a first pixel containing impulsive noise exists in the unit area by using the calculated threshold and applying a median filter to the first pixel in the case the first pixel is detected; and

a second filter identifying a second pixel adjacent to the first pixel and applying a mean-variance filter to the second pixel.